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FIG. 1

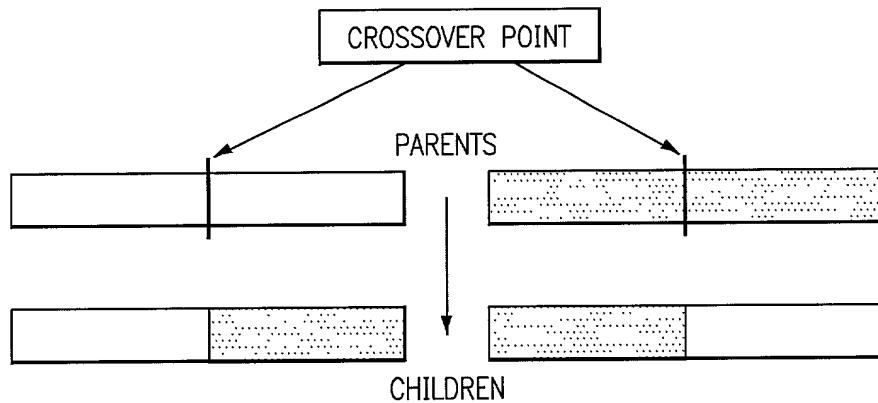


FIG. 2

```
<!ELEMENT GAIndividual (bitString)
<!ELEMENT bitString (#PCDATA)

<GAIndividual>
  < bitString >0111000011010011</bitString>
</GAIndividual>
```

FIG. 3

```
<!ELEMENT GAIndividual (TSPLeg*)>
<!ELEMENT TSPLeg ( TSPLeg*, PCDATA)>
```

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FIG. 4

```
<!ELEMENT GAParams (PopulationSize, GABinaryVariable+, MaxGenerations,  
    NumVariables, CrossoverType, CrossoverProbability,  
    MutationProbability, OutputFilename, SelectionType,  
    MatingPoolChoice, Cmult, DTDName, DTDFilename traditionalProb )>  
<!ELEMENT PopulationSize (#PCDATA)>  
<!ELEMENT GABinaryVariable (MinBinaryValue, MaxBinaryValue, DivideBy,  
    VarNodeName, CrossNodeProbability, BinaryProbability)>  
<!ELEMENT MinBinaryValue (#PCDATA)>  
<!ELEMENT MaxBinaryValue (#PCDATA)>  
<!ELEMENT DivideBy (#PCDATA)>  
<!ELEMENT VarNodeName (#PCDATA)>  
<!ELEMENT CrossNodeProbability (#PCDATA)>  
<!ELEMENT BinaryProbability (#PCDATA)>  
<!ELEMENT MaxGenerations (#PCDATA)>  
<!ELEMENT NumVariables (#PCDATA)>  
<!ELEMENT CrossoverType (#PCDATA)>  
<!ELEMENT MutationProbability (#PCDATA)>  
<!ELEMENT OutputFilename (#PCDATA)>  
<!ELEMENT SelectionType (#PCDATA)>  
<!ELEMENT MatingPoolChoice (#PCDATA)>  
<!ELEMENT Cmult (#PCDATA)>  
<!ELEMENT DTDName (#PCDATA)>  
<!ELEMENT DTDFilename (#PCDATA)>  
<!ELEMENT traditionalProb (#PCDATA)>
```

FIG. 7

1. $f_1(x_i) = \sum x_i^2, i = 1..3, -5.12 \leq x_i \leq 5.12$
2. $f_2(x_1, x_2) = 100 * (x_1^2 - x_2)^2 + (1 - x_1)^2, -2.048 \leq x_i \leq 2.048$
3. $f_3(x_i) = \sum \text{Integer}(x_i), i = 1..5, -5.12 \leq x_i \leq 5.12$
4. $f_4(x_i) = \sum i (x_i)^4 + \text{Gauss}(0,1), i = 1..30, -1.28 \leq x_i \leq 1.28$
5. $f_4(x_i) = .002 + \sum j (1 / (j + \sum_i (x_i - a_{ij})^6)), i = 1..2,$
 $j = 1..25, -65.536 \leq x_i \leq 65.536$

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FIG. 5

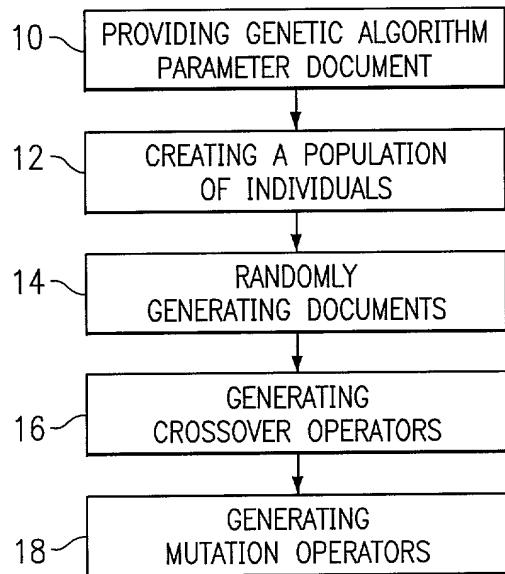


FIG. 6

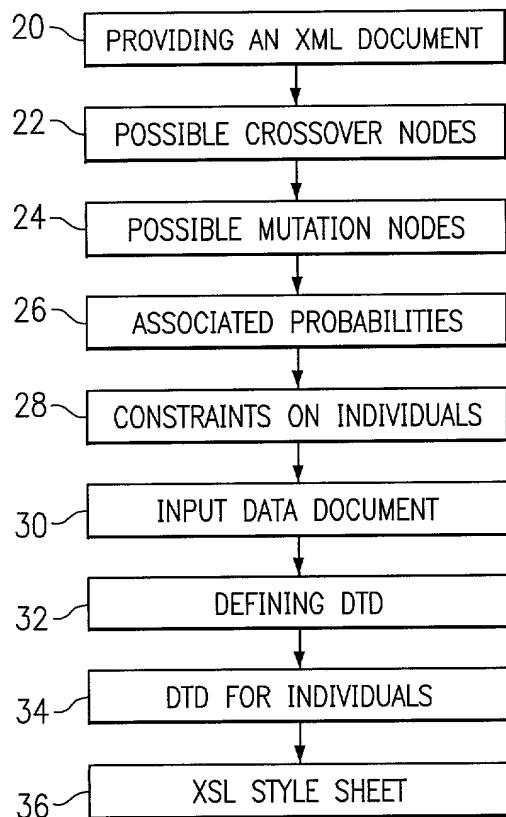


FIG. 12

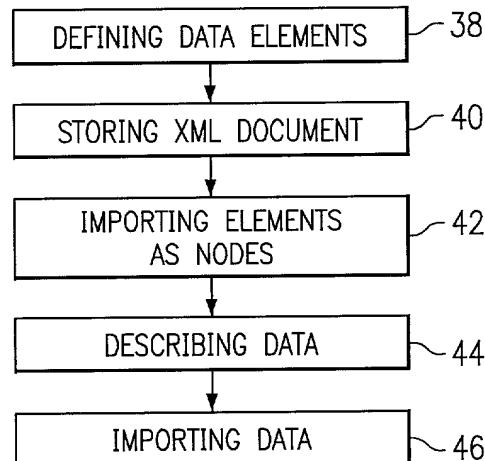


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```
<!DOCTYPE GAParams SYSTEM "GAParams.dtd">
<GAParams>
    <PopulationSize>50</PopulationSize>
    <GABinaryVariable>
        <MinBinaryValue>-512</MinBinaryValue>
        <MaxBinaryValue>511</MaxBinaryValue>
        <DivideBy>100</DivideBy>
        <VarNodeName>xone</VarNodeName>
        <CrossNodeProbability>.2</CrossNodeProbability>
        <BinaryProbability>.50</BinaryProbability>
    </GABinaryVariable>
    <GABinaryVariable>
        <MinBinaryValue>-512</MinBinaryValue>
        <MaxBinaryValue>511</MaxBinaryValue>
        <DivideBy>100</DivideBy>
        <VarNodeName>xtwo</VarNodeName>
        <CrossNodeProbability>.2</CrossNodeProbability>
        <BinaryProbability>.50</BinaryProbability>
    </GABinaryVariable>
    <GABinaryVariable>
        <MinBinaryValue>-512</MinBinaryValue>
        <MaxBinaryValue>511</MaxBinaryValue>
        <DivideBy>100</DivideBy>
        <VarNodeName>xthree</VarNodeName>
        <CrossNodeProbability>.2</CrossNodeProbability>
        <BinaryProbability>.50</BinaryProbability>
    </GABinaryVariable>
    <MaxGenerations>60</MaxGenerations>
    <NumVariables>3</NumVariables>
    <CrossoverType>1</CrossoverType>
    <CrossoverProbability>.60</CrossoverProbability>
    <MutationProbability>.001</MutationProbability>
    <OutputFilename>d1outfile.txt</OutputFilename>
    <SelectionType>0</SelectionType>
    <MatingPoolChoice>0</MatingPoolChoice>
    <Cmult>1.2</Cmult>
    <DTDName>DeJongOneIndividual</DTDName>
    <DTDFilename>DeJongOneIndividual.dtd</DTDFilename>
    <traditionalProb>.0</traditionalProb>
</GAParams>
```

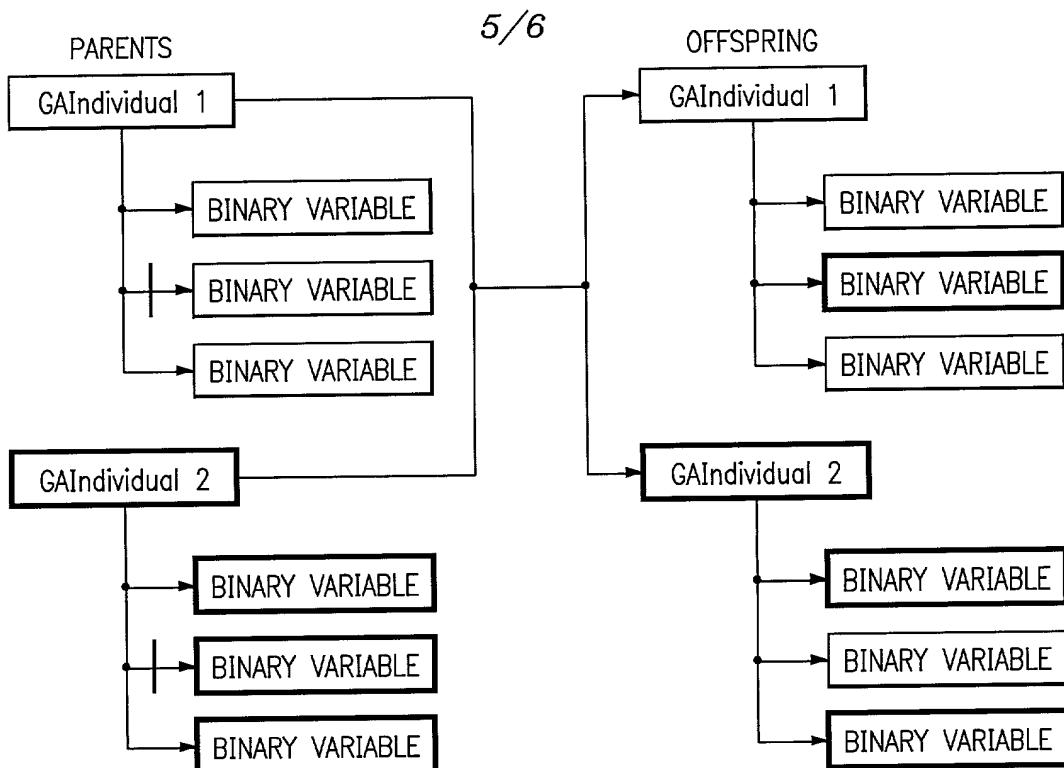


FIG. 9

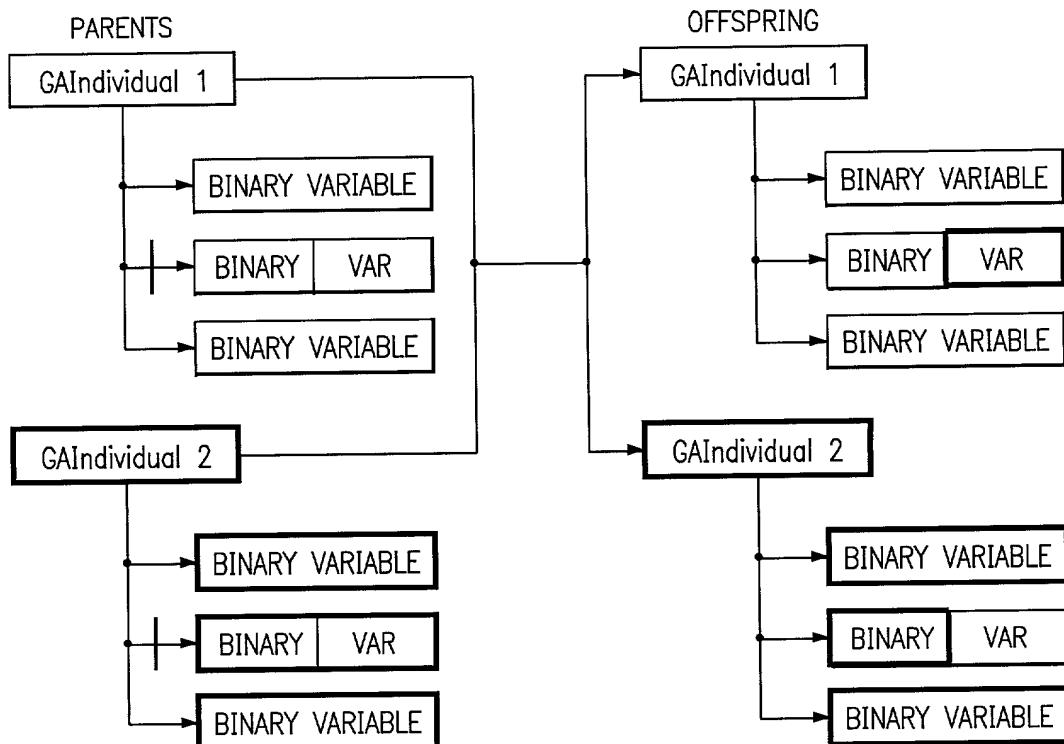


FIG. 10

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FIG. 11

